Proposition 13
Urban Water Conservation Grant Application

Commercial, Industrial, & Institutional
Incentive Program
Hospital X-Ray Film Processor Recirculating System

Submitted in partnership

Los Angeles Department of Water and Power

San Diego County Water Authority

December 3, 2002

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PART A
Project Description

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1. Applicant:	Partnership of two agencies: Los Angeles Department of Water and Power and San Diego County Water Authority
2. Project Title:	Hospital X-Ray Film Processor Recirculating System Incentive Program
3. Person authorized to sign and submit proposal	San Diego County Water Authority Ken Weinberg, Director of Water Resources San Diego County Water Authority 4677 Overland Avenue, San Diego, CA 92123 Telephone: 858.522.6743 Fax: 858.268.7881 E-mail: kweinberg@sdcwa.org
4. Contact person (if different)	**San Diego County Water Authority** Rose M. Smutko, Ass't Water Resources Specialist San Diego County Water Authority 4677 Overland Avenue, San Diego, CA 92123 Telephone: 858.522.6756 Fax: 858.268.7881 E-mail: rsmutko@sdcwa.org **Los Angeles Department of Water and Power** Thomas L. Gackstetter, Water Conservation Manager Los Angeles Department of Water and Power 111 North Hope St., Rm. 1463, Los Angeles, CA 90012 Telephone: 213.367.0936 Fax: 213.367.1055 E-mail: Thomas.Gackstetter@Water.Ladwp.com

5. Funds requested:	$ 623,500
6. Applicant funds	$ 9,857
Local cost share	$1,000,000
Customer funds	
Installation	$ 75,000
Maintenance	$6,500,000

7. Total project costs:	$8,208,357

8. Estimated annual amount of water to be saved: (AF)	1,250 Acre-feet
Estimated total amount to be saved over/years	12,500 AF/10 years
Benefit/cost ratio of project: (all costs, customer avoided cost perspective)	2.54
Benefit/cost ratio of project: (all installation costs, agency avoided cost perspective)	2.34
Estimated $/acre-feet of water to be saved: (agency perspective)	$137/AF
9. Project life:	Oct. 2003 to Jan. 2006

Where the project is to be conducted:

10. State Assembly District(s):	
Los Angeles:	38--49, 51, 52 and 55
San Diego:	66, 73, 74, 75, 76, 77, 78 and 79
11. State Senate District(s):	
Los Angeles:	19 through 28
San Diego:	36 through 40
12. Congressional District(s):	
Los Angeles:	24, 26, 29, 30, 33, and 35
San Diego:	48, 49, 50, 51, and 52
13. County(s):	Los Angeles, San Diego
14. Do the actions in this application involve physical changes in land use, or potential future uses in land use?	No

A-2 Application Signature Page

By signing below, the official declares the following:

The truthfulness of all representatives in the application;

The individual signing the form is authorized to submit the application on behalf of the applicant;

The individuals signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the application on behalf of the applicant; and

The applicant will comply with all terms and conditions identified in this Application Package if selected for funding.

San Diego County Water Authority

_____ _____ _____

Signature Name and title Date

PART A
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Not Applicable

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A-4 Description of Project

The Los Angeles Department of Water and Power (LADWP) and the San Diego County Water Authority (Authority) propose to implement a project that provides a $3,247 incentive each for a total of 500 X-Ray film processor recirculating systems ("Water Saver/Plus™", manufactured by C & A X-Ray) for local hospitals and large medical centers located in the Los Angeles and San Diego Counties. The proposed incentive amount offsets the initial cost of the Water Saver/Plus™, and is the critical element of the proposed program given that California's hospitals are facing increasing financial challenges.

Both agencies currently utilize the same water conservation program contractor, Honeywell DMC Services (HDMC), to offer incentives to commercial, industrial, and institutional (CII) customers for ultra-low-flush toilets (ULFT), urinals, high efficiency commercial clothes washers, cooling tower conductivity controllers, and other fixtures and devices that conserve water. Funding through Proposition 13 would enable both LADWP and the Authority to integrate this new technology into its already established CII incentive programs with a minimum of administrative time and expense.

As member agencies of the Metropolitan Water District of Southern California (Metropolitan), LADWP and the Authority pledge $1,000,000 (made available through the Metropolitan's Regionwide Water Conservation Incentive Program) and request $623,500 from the Proposition 13 Urban Water Conservation Program for a total project funding amount of $1,623,500. In-kind services include LADWP and Authority staff time for administration, data analysis and assessment, reporting, programmatic customer service, marketing, and outreach efforts. In kind services comprise 100 hours of staff time each for LADWP and the Authority, and have an estimated value of $9,857 that is in addition to the estimated project costs above.

For a total project cost of $1,708,357 (exclusive of customer-paid maintenance costs) over the two-year project period, 12,500 AF of water savings will be realized, resulting in a total discounted avoided cost of purchased water of $4,000,000 (agency perspective), and $16,400,000 (customer perspective). This newly developed technology, when installed, has proven water savings that are more dramatic than any other CII device to date.

Water savings for the Water Saver/Plus™ technology has been previously quantified through projects undertaken by both LADWP and Metropolitan, under rigorous evaluation protocol. Metropolitan developed and its Board recently approved a $2,000 per unit incentive as a result of the demonstrated savings of these projects.

An annual water savings benchmark (see Attachment A) of 3.2 AF per device was established by an independent third party based on the LADWP and

Metropolitan projects. However, it is recognized that each of these installations was undertaken on older, less efficient X-Ray processor equipment having a water use rating of 2.5 gallons per minute. Research conducted by C & A X-Ray indicates that many of the less efficient processors have been replaced over time. Therefore, the majority of the X-Ray processors targeted under the proposed program is newer equipment having a water use rating of 1.5 gallons per minute, and the assumed savings per processor retrofitted has been reduced accordingly to 2.5 AF per year.

All X-Ray processors require routine maintenance for proper operation, and the required maintenance for the Water Saver/Plus™ system is consistent with a typical maintenance schedule. The Water Saver/Plus™ requires cleaning on a bi-weekly basis to prevent build up of film development chemicals. The unit is drained, rinsed, cleansed and rinsed again. An algaecide is added to the reservoir. This required maintenance is provided by C & A X-Ray and costs the customer approximately $1,300 per year.

A-5 Maps

Although this project is not a capital improvement project, maps of the Los Angeles Water and Power and the San Diego County Water Authority service areas are included (see Attachment B).

A-6 Statement of Work, Schedule

DATE	TASK	INSTALLS	PROJECT COSTS		
			MWD	PROP 13	ADMIN
1-Oct-03	Contract Awarded				
5-Jan-04	Amend Agency Agreements with Metropolitan				
13-Jan-04	Kick off Meeting and Marketing				
2-Feb-04	Water Saver/Plus™ Installations Begin				
30-Apr-04	First Production Report	65	$ 130,000	$ 81,055	$ 1,232
31-Jul-04	Second Production Report	65	$ 130,000	$ 81,055	$ 1,232
31-Oct-04	Third Production Report	65	$ 130,000	$ 81,055	$ 1,232
31-Jan-05	Fourth Production Report	65	$ 130,000	$ 81,055	$ 1,232
30-Apr-05	First Production Report	60	$ 120,000	$ 74,820	$ 1,232
31-Jul-05	Second Production Report	60	$ 120,000	$ 74,820	$ 1,232
31-Oct-05	Third Production Report	60	$ 120,000	$ 74,820	$ 1,232
31-Jan-06	Fourth Production Report	60	$ 120,000	$ 74,820	$ 1,232

31-Jan-06	**End of Program**	**500**	**$ 1,000,000**	**$ 623,500**	**$ 9,856**

A-7 Monitoring and Evaluation

Assessment of performance will measure project success relative to project goals and objectives. Monitoring and assessment of activity reports for the Proposed Project will determine the impact of incentives. HDMC's current Scope of Work includes provision of detailed monthly and quarterly status reports, as well as summary reporting at the end of each fiscal year. Also, LADWP and Authority program managers maintain a close working relationship with HDMC via frequent telephone calls, e-mails, inspection ride-alongs, and office visits.

The proposed program will include multi-faceted quality control, including on-site verifications, telephone surveys of program participants, and meetings with C & A X-Ray on an as-needed basis.

All information and data regarding the Proposed Program will be retained in paper and electronic format and provided to all co-funding partners. LADWP and the Authority are governed by the Public Information Act, making all data available upon request.

Metering of savings has been undertaken on numerous prior installations and is not included under the proposed program. Please note that C & A X-Ray will be responsible for guaranteeing the performance of installed equipment on a contractual basis with each health care facility.

A-8 Qualifications of the Applicants and Cooperators

1. Project Manager resumes**.** See Attachment C.

The LADWP Project Manager for the Proposed Project will be Thomas L. Gackstetter, Water Conservation Manager. Mr. Gackstetter has been with the City of Los Angeles for 27 years, including 16 years with LADWP, and in his current position of Water Conservation Manager for four years. Mr. Gackstetter is responsible for management of all LADWP water conservation staff in the design and implementation of conservation programs. He is also responsible for management and oversight of LADWP's $16 million annual water conservation budget, contract negotiation and management, and overall contractor oversight. Mr. Gackstetter also acts as liaison to other California water agencies and state/federal water agencies, and is a member of the California Urban Water Conservation Council's Steering Committee.

Ms. Rose M. Smutko will be the Authority Project Manager for the Proposed Project. Ms. Smutko has been with the Authority for four years. She manages the CII Voucher Incentive Program, Residential Survey, and the Recycled Water Certification Workshops for the Authority's 22 member agencies. Ms. Smutko is responsible for design and implementation of programs, contract negotiation and management, and contractor oversight.

2. External Cooperators. See Attachment D

This Proposed Project would comprise a partnership between LADWP, the Authority, Metropolitan, and upon approval of Proposition 13 grant funds, the Department of Water Resources. The mission of these agencies is to collectively provide a safe and reliable supply of water to their customers.

C & A X-Ray is the manufacturer of the Water Saver/Plus™, and is managed by Mr. David Crowe and Mr. Mike Ferrara. C & A will enter into a service contract with each participant of the proposed program, and will guarantee each system's performance.
C & A X-Ray has committed to the success of the of the proposed program by discounting the cost of each system by $1,000 to the end user, for the 500 systems proposed (see Attachment E). This discount, along with the proposed incentive amount, results in zero equipment costs for the Proposed Program participant.

Honeywell DMC Services, Inc. (HDMC) is the current prime implementation contractor for the CII Program in both LADWP and Authority service areas. HDMC operates the existing CII program under contract with Metropolitan. HDMC has been serving the resource management needs of water, gas, and electric utilities for over 23 years. This includes extensive experience in voucher and rebate processing, measure installation and verification, water and energy surveys, and customer service education and support services. HDMC has developed unmatched expertise in understanding customer needs and delivering service that exceeds those expectations, through the performance of millions of home audit and installation visits, and the processing of thousands of rebates and vouchers. HDMC has been a pioneer in the water industry for more than 15 years, designing and implementing some of the most successful water conservation programs.

A-9 Innovation

A new development in the area of diagnostic medical equipment is providing extraordinary water savings. Recent projects and studies undertaken by the LADWP, the City of Irvine, and Metropolitan have demonstrated that the installation of a specially designed recirculating system (Water Saver/Plus™) to an existing medical X-Ray film processor, saves an average 3.2 ace-feet of potable water annually. Existing X-Ray processing systems in hospital applications consume extremely large amounts of water in the film washing process and also for processor cooling. These systems use a "once-through" water flow process and typically operate 24 hours per day, seven days per week. The Water Saver/Plus™ utilizes a 15-gallon reservoir, treatment and pump system to re-use the water, resulting in the capture of 96 – 98 percent of typical discharge. Following the installation of the Water Saver/Plus™, water use dropped to less than 1/10th of an acre-foot for each of the 38 processors retrofitted, as shown in Attachment A.

This technology and its demonstrated water savings have wide application for medical facilities employing X-Ray processors throughout California and the nation.

A-10 Agency Authority

1. Does the applicant (official signing A-2, Application Signature Page) have the legal authority to submit an application and to enter into a funding contract with the State?
Yes.

2. What is the legal authority under which the applicant was formed and is authorized to operate?
LADWP operates under charter of the City of Los Angeles.
The Authority operates under the authorization of the State of California.

3. Is the applicant required to hold an election before entering into a funding contract with the State?
No, neither LADWP nor the Authority is required to hold an election

4. Will the funding agreement between the applicant and the State be subject to review and/or approval by other government agencies? If yes, identify all such agencies.
No. LADWP will request the Board of Water and Power Commissioners or the Board's designee to review and execute the completed contract. The Authority will request the President of the Board of Directors to review and execute the completed contract.

5. Is there any pending litigation that may impact the financial condition of the applicant, the operation of the water facilities, or its ability to complete the proposed project? If none is pending, so state.
No. There is no pending litigation for either LADWP or the Authority.

A-11 Operations and Maintenance

Not applicable to this project (non-construction project).

PART B
Engineering and Hydrologic Feasibility

Not applicable to this project (non-construction project).

PART C
Plan for Completion of Environmental Documentation

C-1 California Environmental Quality Act and National Environmental Policy Act
C-2 Permits, Easements, Licenses, Acquisitions, and Certificates
C-3 Local Land Use Plans
C-4 Applicable Legal Requirements

In accordance with the California Environmental Quality Act (CEQA), it has been determined that the Proposed Project is Categorically Exempt from further CEQA review, as per Los Angeles City CEQA Guidelines, Article 3, Class 1, Category 6, Section 15301, and as per Section 15301 for the Authority.

D-1 Need for the Project

Demand management, or water conservation, is frequently the lowest cost resource available to water agencies. Water conservation is a well-established component of the integrated resource planning process, and is an effective means to ensure a reliable water supply in the future for the increasing population and commerce of our local region. Over the long term, conservation measures serve to save agencies and ratepayers money by reducing the region's need for additional, more expensive supply.

The goal of the Proposed Project is to reduce the water used in the CII sector through enhanced heath care industry participation in the program. Objectives include:

- Accelerate the purchase and installation of proven water-efficient X-Ray film processor system (Water Saver/Plus™), resulting in decreased inefficient "once-through" flow processes.
- Provide water conservation incentives for cost-saving equipment to an industry that is financially challenged
- Reduce imported water demand (up to 90 percent of water supplied to both LADWP and the Authority is imported from outside the region).
- Reduce stress on the Bay-Delta.
- Improve water supply reliability.
- Improve water quality.
- Meet the objectives of the Memorandum of Understanding Regarding Urban Water Conservation in California, of which both the City of Los Angeles and the Authority are original signatories.
- Meet the goals and objectives of local and regional water management plans.
- In a semi-arid region prone to periodic droughts, use water efficiently and increase reliability of local water resources to help protect Southern California's vibrant economy, and better ensure a safe, reliable water supply for the future.

D-2 Outreach, Community Involvement, Support, Opposition

Outreach efforts to the Los Angles and San Diego areas are key to the Proposed Project's success. An analysis of the 2002-03 budget bill from the State Legislative Analyst's Office[1] states that hospitals in California continue to face substantial financial pressures. "It is estimated that seven million of the state's 33 million residents are uninsured, while California ranks 48th in the nation in federal reimbursements per Medicare beneficiary."[2] An article entitled the "Financial Challenges of California Hospitals" by Shattuck Hammond Partners states that:

> *"When compared to hospitals across the nation, California hospitals function in a marketplace that poses a more formidable challenge to financial health. They operate in a highly competitive pricing environment for commercial patients, and federal budget reductions on Medicare payments have further exacerbated revenue pressures.*
>
> *On the expense side of the equation, California hospitals confront a challenging climate relative to other hospitals in the nation. they have a higher patient acuity than the national averages due to the impacts of managed care on patient treatment patterns; higher wages for hospital employees; a growing nursing shortage; and the third-largest uninsured population in the nation . . . Capital for maintenance, replacement, and new technology is a critical need for hospitals in California."*[3]

This information depicts an industry facing extraordinary financial challenges. While most facility managers might embrace the reduction of water costs within their facility through the installation of water saving measures, available hospital funds for the initial installation costs may not be available. Therefore, the highest possible incentive must be made available to hospitals to ensure the installation of the highly efficient Water Saver/Plus™ systems thereby accelerating water savings and reducing operating costs.

LADWP and the Authority will organize a kick-off meeting with facility managers and decision makers of local hospitals, if funding is approved. An introduction of the Water Saver/Plus™ system will be showcased, as well as other water efficient devices that could be integrated into the hospital facility. Preliminary research indicates that LADWP's service area includes approximately 58 hospitals with 300 processors, and 50 large medical clinics with an estimated 100 processors that are targets for a retrofit. The Authority's service area includes

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[1] "Hospitals Facing Financial Headaches" by Office of Statewide Health Planning and Development. State Legislative Analyst Office. Budget Bill. 2002-03.

[2] "Outlook for Californrnia Hospitals" by Weekly Update. UC Davis Health System. September 8, 2000.

[3] "Financial Challenges for California Hospitals" by Shattuck Hammond Partners. California HealthCare Foundation. September 2001.

approximately 32 hospitals and as many large medical centers. It is anticipated that 250 hospital X-Ray film processors can be retrofitted with the Water Saver/Plus™ system in each service area within two years.

PART E
Water Use Efficiency Improvements and Other Benefits

E-1 Water Use Efficiency Improvements

For large-scale users of water in the institutional setting, the CII Program focuses on fostering water-use efficiency with an eye toward conservation efforts that have a positive effect on the customer's bottom line. During this period of financial challenges for California hospitals and an expanding technology-driven economy, accelerating the installation of the Water Saver/Plus™ systems is critical to water savings in Southern California. Initial studies of this technology completed by Metropolitan cite the following:

> *"Existing X-Ray processing systems in hospitals consume extremely large amounts of water and are very inefficient in their film washing process. These systems are "once-through" flow technology. The new recirculating system utilizes a reservoir, treatment and pump system to re-use the water. Through the Innovative Conservation Program, thirty-eight systems were installed and tested in seven major southern California hospitals. Annual water savings averaged 3.2 acre-feet per year per system."*[4]

Additional information from the study noted that all of the hospitals' X-Ray film processor systems in the study operated 24 hours per day, 365 days per year, a common attribute in the hospital environment.

E-2 Other Project Benefits

Water Reliability Benefits

Reliability of water supplies to meet future needs is improved equal to the total demand reduction resulting in the completion of this project.

Water Quality Benefits

Reducing demands on the Bay-Delta during those times of year when water diversions can contribute to water quality issues, i.e. salinity, has demonstrated water quality improvement. The Proposed Project is estimated to reduce water demands by approximately 1,250 AFY with a total project water savings of 12,500 AF. This reduction is significant step to improve water quality in the immediate future.

[4] Board Memo from the Metropolitan Water District of Southern California. Board Action. August 20, 2000 Meeting.

Bay-Delta Benefits
Reduced water demand on the Bay-Delta through augmented participation in a regional demand-reduction program can improve water supply reliability to meet future needs, thus generating real water savings while reducing diversions and providing secondary benefits to the environment. This demand reduction will contribute to the CALFED objectives of a solution to the Bay-Delta issues, including water quality, supplies matched to beneficial uses, improved habitats and ecological functions.

Meeting Objectives of Water Management Plans
Local, regional and statewide water management plans create a framework to meet an overriding goal of water conservation in California. Both LADWP and the Authority have established objectives to reduce demand through a variety of conservation programs, including incentive programs. Regional and statewide water management plans also include programmatic goals to reduce water demand throughout the Los Angles and San Diego regions. The Proposed Project contributes toward the water demand reduction goals of each of these plans.

PART F
Economic Justification: Benefits to Costs

F-1 Net Water Savings
Since Metropolitan, LADWP, and the Authority will collectively offer a $2,000 incentive per device, plus all administrative and marketing costs, all Proposition 13 grant funding will be applied directly to increased incentives to eligible customers. Without the ability to offer the Water Saver/Plus™ system to hospitals at virtually no cost, past experience has demonstrated that it is very unlikely the devices will be installed in the numbers sought.

LADWP and the Authority together will realize reduced annual water demand in the amount of 1,250 AF by their CII customers, resulting in a total discounted avoided cost of purchased water over the life of the Proposed Project of over $4,000,000, based on the current cost of $435/AF for treated supply.

Metropolitan will realize an equal amount of reduction in demand for potable water, and this can result in reduced purchases and the coincident reduction in associated costs of water treatment and pumping. This can also result in an equivalent amount of water made available to Metropolitan for other existing demands, including beneficial conjunctive uses. Total avoided cost (discounted) to Metropolitan is estimated at $6,400,000.

F-2 Project Budget and Budget Justification

The Proposed Project encompasses Project Budget Items (c) Materials/Installation; (e) Equipment Purchases; and (g) Project Administration/Overhead, as shown in the table below. The second table (Annual Operations and Maintenance Costs) includes costs incurred by participating customers, and the third table summarizes total Project costs.

Capital Costs (Long Form)

	Capital Cost Category (a)	Cost ($) (b)	Contingency (%) (c)	Contingency ($) (d) (bxc)	Subtotal ($) (e) (b+d)
(a)	Land Purchase/Easement	0	0%	0	0
(b)	Planning/design/Engineering	0	0%	0	0
(c)	Materials/Installation	75,000	0%	0	75,000
(d)	Structures	0	0%	0	0
(e)	Equipment Purchases/rentals	1,623,500	0%	0	1,623,500
(f)	Environmental Mitigation/ Enhancement	0	0%	0	0
(g)	Construction Administration/ Overhead	9,857	0%	0	9,857
(h)	Project Legal/License Fees	0	0%	0	0
(i)	Other	0	0%	0	0
(j)	Total (1) (a + ... + i)				1,708,357

The following cost elements comprise the table above:

(c) Installation costs of $150 per device, 500 devices, paid by participating customers.
(e) Equipment costs of $3,247 per device, 500 devices, paid via rebate from Metropolitan and reimbursement from Proposition 13 grant.
(g) Program management and administration overhead of 100 hours of LADWP staff labor at $57.81 per hour, and 100 hours of Authority staff labor at $40.76 per hour.

Note: No contingencies are included due to the commitment of C & A X-Ray (see Attachement E) to provide all equipment and installation services at fixed prices for the duration of the project.

Annual Operations and Maintenance Costs (Long Form)

Year (a)	Operations/ Maintenance Costs ($) (b)	Administration/Other Costs (c)	Total Costs ($) (d) (b+c)	Discount Factor (e)	Discounted O&M Costs ($) (f) (dxe)
0			0	1.000	0
1	650,000	0	650,000	0.943	612,950
2	650,000	0	650,000	0.890	578,500
3	650,000	0	650,000	0.840	546,000
4	650,000	0	650,000	0.792	514,800
5	650,000	0	650,000	0.747	485,550
6	650,000	0	650,000	0.705	458,250
7	650,000	0	650,000	0.665	432,250
8	650,000	0	650,000	0.627	407,550
9	650,000	0	650,000	0.592	384,800
10	650,000	0	650,000	0.558	362,700
Total					4,783,350

The following cost elements comprise the table above:

(b) Maintenance cost of $1,300 per device per year, 500 devices, paid by participating customers, and do not impact the Proposed Project budget.

Total Costs (Long Form)

Total Capital Costs ($) (a)	Total O&M Costs ($) (b)	Total Costs ($) (c) (a+b)
1,708,357	4,783,350	6,491,707

From tables above

F-3 Economic Efficiency

The value of the Proposed Project's water supply is defined in terms of reduced water demand upon Metropolitan, as detailed in Section F-1, Net Water Savings.

The following tables quantify the economic value of Program benefits accrued by Program participants, in terms of the avoided cost of retail water rates and coincident reduction in sewer service charges. These values are utilized to calculate the benefit/cost ratio (customer perspective) shown below.

Project Benefits – Customer Perspective (Long Form)

Year (a)	AF Water Savings/Yr LADWP (b)	AF Water Savings/Yr Authority (c)	Avoided Cost for LADWP Customers ($/AF) (d)	Avoided Cost for Authority Customers ($/AF) (e)	Total Water Supply Benefits ($) (f)	Discount Factor (6.0%) (g)	Total Discounted Benefits ($) (h)
0	-----	-----	-----	-----	-----	1.000	-----
1	625	625	1,939	1,640	2,236,875	0.943	2,109,37
2	625	625	1,939	1,640	2,236,875	0.890	1,990,81
3	625	625	1,939	1,640	2,236,875	0.840	1,878,97
4	625	625	1,939	1,640	2,236,875	0.792	1,771,60
5	625	625	1,939	1,640	2,236,875	0.747	1,670,94
6	625	625	1,939	1,640	2,236,875	0.705	1,576,99
7	625	625	1,939	1,640	2,236,875	0.665	1,487,52
8	625	625	1,939	1,640	2,236,875	0.627	1,402,52
9	625	625	1,939	1,640	2,236,875	0.592	1,324,23
10	625	625	1,939	1,640	2,236,875	0.558	1,248,17
TOTAL	**6,250**	**6,250**			**22,368,750**		**16,461,16**

Note: Explanation of Avoided Costs provided in the table and accompanying notes found on the following page. Assumed is the installation of 250 Water Saver/Plus™ systems in each service area.

Project Benefit/Cost Ratio

Project Benefits ($)	16,461,163
Project Costs ($)	6,491,707
Benefit/Cost Ratio	**2.54**

Avoided Costs of Current Supply Sources (Customer Perspective)

Sources of Supply (a)	Cost of Water ($/AF) (b)
LADWP - Water Rate C (Commercial, Industrial, Governmental Customers)	954
LA Bureau of Sanitation Sewer Service Charge	985
City of San Diego – Commercial Water Rate	656
City of San Diego - Sewer Service Charge	984

The figures shown above represent the avoided cost of both water purchased and payment of sewer service charges from the customer perspective. The installation of the Water Saver/Plus™ systems under this Proposed Project will result in reduced customer purchases of water and in coincident reduction in wastewater (sewer) flows.

The figures above are based on the following current water and sewer rates:

LADWP (water)	$2.19 per HCF
LA Bureau of Sanitation	$2.26 per HCF
City of San Diego (water)	$1.505 per HCF
City of San Diego (sewer service)	$2.258 per HCF

Notes:
(1) The City of San Diego encompasses 50 percent of the Authority's entire service area. Therefore, the water and sewer service charge rates for the City of San Diego have been used for the purposes of this application.
(2) Avoided costs comprising the customer perspective (rather than the agency perspective) are provided above per the recommendation of DWR's Lorraine Marsh. Tables showing avoided costs and other financial attributes of the Proposed Project from the agency perspective are included in Appendix A for reference.

Appendix A
Benefit/Cost Analysis Tables
Water Conservation Project

Table 1
Capital Costs – Agency Perspective (Long Form)

	Capital Cost Category (a)	Cost ($) (b)	Contingency (%) (c)	Contingency ($) (d) (bxc)	Subtotal ($) (e) (b+d)
(a)	Land Purchase/Easement	0	0%	0	0
(b)	Planning/design/Engineering	0	0%	0	0
(c)	Materials/Installation	75,000	0%	0	75,000
(d)	Structures	0	0%	0	0
(e)	Equipment Purchases/rentals	1,623,500	0%	0	1,623,500
(f)	Environmental Mitigation/ Enhancement	0	0%	0	0
(g)	Construction Administration/ Overhead	9.857	0%	0	9,857
(h)	Project Legal/License Fees	0	0%	0	0
(i)	Other	0	0%	0	0
(j)	Total (1) (a + ... + i)				1,708,357

The following cost elements are included in the Table 1 above:

(c) Installation costs of $150 per device, 500 devices, paid by participating customers.
(e) Equipment costs of $3,247 per device, 500 devices, paid via rebate from Metropolitan and reimbursement from Proposition 13 grant.
(g) Administration overhead of 100 hours of LADWP staff labor at $57.81 per hour, and 100 hours of Authority staff labor at $40.76 per hour.

Note: No contingencies are included due to the commitment of C & A X-Ray to provide all equipment and installation ce services at fixed prices for the duration of the project

Table 2
Annual Operations and Maintenance Costs – Agency Perspective (Long Form)

Year (a)	Operations/ Maintenance Costs (b)	Administration/Other Costs (c)	Total Costs (d) (b+c)	Discount Factor (e)	Discounted O&M Costs (f) (dxe)
0			0	1.000	0
1	0		0	0.943	0
2	0		0	0.890	0
3	0		0	0.840	0
4	0		0	0.792	0
5	0		0	0.747	0
6	0		0	0.705	0
7	0		0	0.665	0
8	0		0	0.627	0
9	0		0	0.592	0
10	0		0	0.558	0
Total					0

Maintenance costs incurred by participating customers – not included in agency perspective.

Table 3
Total Costs – Agency Perspective (Long Form)

Total Capital Costs (1) (a)	Total O&M Costs (2) (b)	Total Costs (c) (a+b)
1708357	0	1708357

(1) From Table 1
(2) From Table 2

Table 4a.
Project Benefits – Agency Perspective (Long Form)

Year (a)	Water Savings (AF/Yr) (b)	Avoided Costs of Current Supply (c)	Total Water Supply Benefits (d) (b x c)	Discount Factor (6.0%) (f)	Total Discounted Benefits (g)
0	-----	-----		1.000	-----
1	1,250	435	543,750	0.943	512,756
2	1,250	435	543,750	0.890	483,938
3	1,250	435	543,750	0.840	456,750
4	1,250	435	543,750	0.792	430,650
5	1,250	435	543,750	0.747	406,181
6	1,250	435	543,750	0.705	383,344
7	1,250	435	543,750	0.665	361,594
8	1,250	435	543,750	0.627	340,931
9	1,250	435	543,750	0.592	321,900
10	1,250	435	543,750	0.558	303,413
TOTAL	12,500				4,001,456

(c) Avoided Cost figure is Metropolitan's current rate per AF for treated water

Table 5
Benefit/Cost Ratio – Agency Perspective

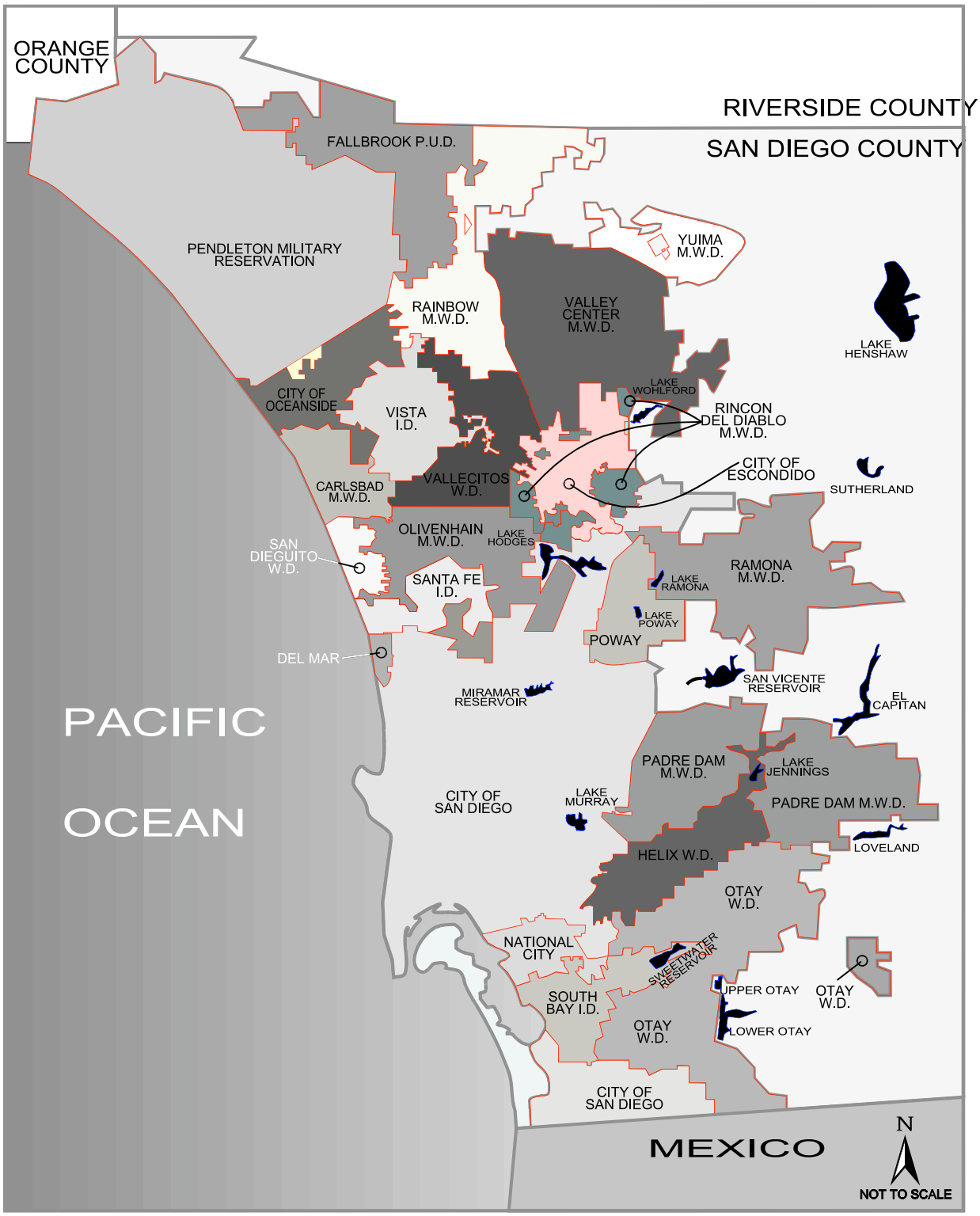
Project Benefits ($)(1)		4,001,456
Project Costs ($)(2)		1,708,357
Benefit/Cost Ratio		2.34

(1) From Table 3: Project Benefits
(2) From Table 4: Project Costs

ATTACHMENTS

ATTACHMENT A
(See separate file)

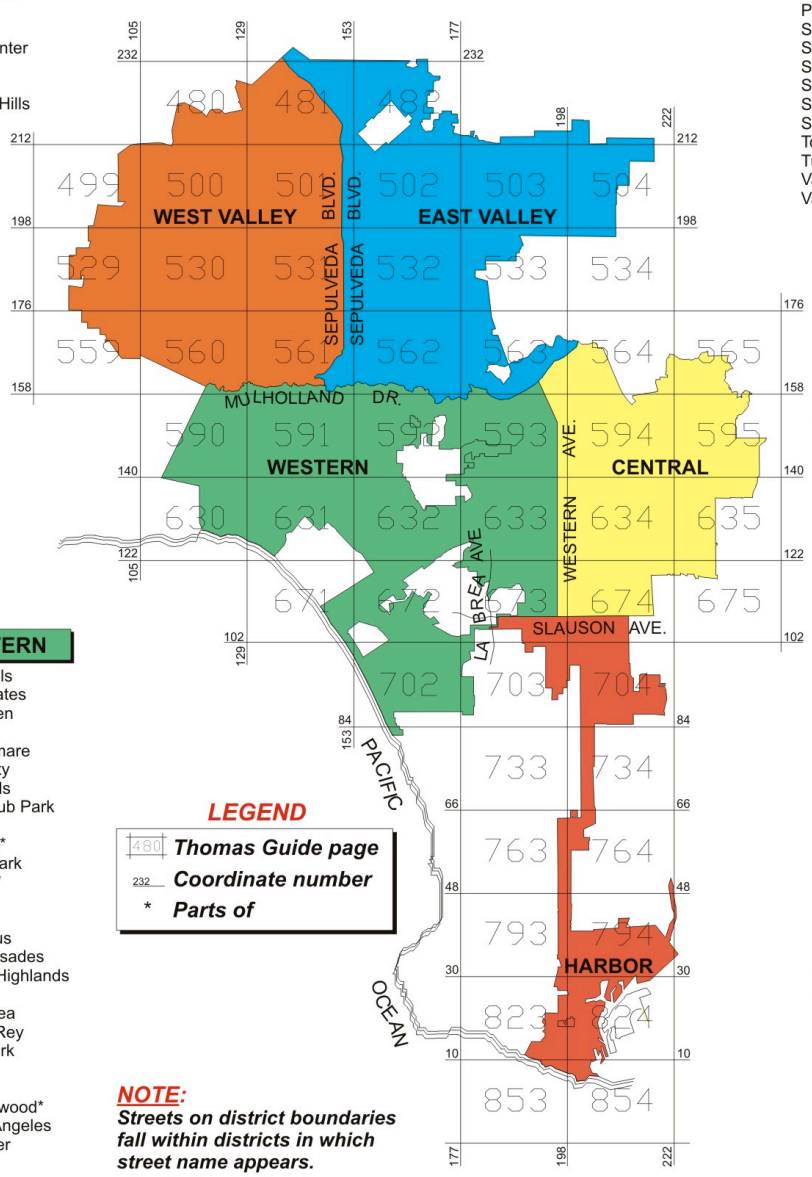
ATTACHMENT B




LADWP WATER SERVICE AREAS
WEST VALLEY
EAST VALLEY
SEPULVEDA BLVD.
SEPULVEDA BLVD.
MULHOLLAND DR.
WESTERN
CENTRAL
WESTERN AVE.
LA BREA AVE.
SLAUSON AVE.
HARBOR
Sacramento
Los Angeles
N

Water Engineering & Technical Services Business Unit
Water GIS

LADWP WATER SERVICE AREAS



WEST VALLEY
Canoga Park
Chatsworth
Encino
Granada Hills
Mission Hills*
North Hills*
Northridge
Porter Ranch
Reseda
Tarzana
Warner Center
West Hills
Winnetka
Woodland Hills

EAST VALLEY
Arleta
Hollywood*
Lake View Terrace
Mission Hills*
North Hills*
North Hollywood
Olive View
Pacoima
Panorama City
Sherman Oaks
Studio City
Sunland
Sun Valley
Sylmar
Sylmar Square
Toluca Lake
Tujunga
Valley Village
Van Nuys

CENTRAL
Atwater Village
Boyle Heights
Chinatown
Eagle Rock
Echo Park
El Sereno
Glassell Park
Griffith Park
Highland Park
Koreatown
Lincoln Heights
Little Tokyo
Los Feliz
Montecito Heights
Monterey Hills
Mt. Washington
Silverlake
So. Pasadena*
Westlake

WESTERN
Baldwin Hills
Bel Air Estates
Beverly Glen
Brentwood
Castellammare
Century City
Cheviot Hills
Country Club Park
Crenshaw
Culver City*
Hancock Park
Hollywood*
Mar Vista
Mid City
Mt. Olympus
Pacific Palisades
Palisades Highlands
Palms
Park La Brea
Playa Del Rey
Rancho Park
Sawtelle
Venice
West Hollywood*
West Los Angeles
Westchester
Westwood

HARBOR
East San Pedro
(Terminal Island)
Harbor City
Harbor Gateway
Hyde Park
L.A. City Strip
San Pedro
Watts
Wilmington

LEGEND

480 ***Thomas Guide page***
232 ***Coordinate number***
* ***Parts of***

NOTE:
Streets on district boundaries fall within districts in which street name appears.

WATER SERVICE AREAS 11-00.CDR

ATTACHMENT C

Thomas Gackstetter

111 N. Hope Street, Room 1463
Los Angeles, CA 90012
Voice: (213) 367-0936
Fax: (213) 367-1055
Email: thomas.gackstetter@ladwp.com

Professional Experience

Los Angeles Department of Water and Power (September, 1994 to Present)

Current Position: Water Conservation Manager

Los Angeles, CA

- Water conservation program design, development and implementation for the City of Los Angeles, including a current pilot program installing ET-based irrigation controllers in large multifamily residential/small commercial sites, high efficiency clothes washer rebate program, ultra-low-flush toilet replacement programs, water use survey programs for all customer sectors.
- Management of staff and resources in the implementation of comprehensive conservation programs and overall customer service. Management and oversight of $16 million annual budget.
- Development and implementation of the Los Angeles Department of Water and Power Supplemental Purchase Specification for ultra-low-flush toilets. The SPS exceeds current national standards to ensure long-term water savings.
- Contract work bid solicitations, contract negotiation and management, contractor oversight.
- Liaison to other California water agencies and state/federal agencies.
- Member of California Urban Water Conservation Council's Steering Committee

Los Angeles Department of Water and Power (January, 1989 to September, 1994)

Los Angeles, CA

Position: Demand-Side Management Planner

- Energy efficiency program design and development, including customer market research (surveys, interviews, focus groups), program policy and guideline development, consensus building, and program implementation.
- Liaison to other City departments, State regulatory agencies, and other electric utilities.
- Account Executive for large energy customers (March, 1989 to July, 1989)

Los Angeles Department of Transportation (July, 1981 to January, 1989)

Los Angeles, CA

- Installation, maintenance and repair of traffic signal systems and equipment.
- Maintenance and enhancement of traffic signal equipment database.

Position: Electrical Equipment Tester

Los Angeles Department of Building and Safety (August, 1977 to July, 1981)

Los Angeles, CA

- Ensure electrical equipment conformance to applicable Underwriters Laboratories Standards, Los Angeles Electrical Code, and other City requirements.

Education

California State University, Fullerton (1982 to 1986)

Fullerton, CA

Bachelor of Arts – Business Administration [Finance]

ROSE M. SMUTKO

Water Management Customer Service Marketing

San Diego County Water Authority
4677 Overland Avenue, San Diego, Califoria 92123-1233
Telephone: 858/522-6756
rsmutko@sdcwa.org

Ability to create and present an excellent image of any agency and its services to customers. Readily accepts new challenges, performing them in an efficient and professional manner. Communicates well with clientele, management, and staff at all levels. Experienced in program management, administration, negotiating, and supervision.

PROFESSIONAL ACHIEVEMENTS

San Diego County Water Authority

Program Manager of the Commercial, Industrial, and Institutional (CII) Voucher for the San Diego County Water Authority. Supervise and evaluate consultant's work in implementation of and evaluation of point-of-purchase conservation program. The CII Program provides vouchers to customers purchasing water efficient equipment in CII settings. CII products include ultra-low-flush toilets, urinals, waterless urinals, coin-operated high-efficiency clothes washers, and cooling tower conductivity controllers. Work in partnership with the Authority's twenty participating member agencies to market the program to their customers.

Program Manager of the Residential Survey at the Authority. The Residential Survey Program provides water conservation surveys to target single-family homes, as well as multi-family properties with less than two acres of irrigated landscape.

City of San Diego

Program Manager of the Ultra-Low Flush Toilet Rebate Program for the City of San Diego. Managed day-to-day operation of a program which involved ongoing communication with contract administrator and customers. Prepared and submitted Manager's Reports, request for proposals, customer correspondence, forms, spreadsheets, and statistical data on water savings. Provided water conservation and rebate program information through presentations to various community and professional groups. Assisted in determining future advertising and marketing strategies.

Program Manager of the Community Based Ultra-Low Flush Toilet Distribution Program of the City of San Diego. Initiated procedures to optimize ongoing positive cooperation between nonprofit organizations and city staff.

City of San Diego (Continued)
Ordinance Administrator of the City of San Diego San Diego Municipal Code Section 93.0208 which required the installation of water-conserving plumbing fixtures upon change of property ownership. Strengthened and improved acceptable policies and procedures with the realtor's community for a cooperative approach toward water conservation.

The co-author of the *"Competitive Assessment of the Water Treatment Plant"* Report. The competitive assessment process compared the cost and quality of the City of San Diego programs and services to the private sector. The report analyzed performance measures, benchmarked performance of comparable services, developed action plans and evaluated alternative service delivery models. Created an informative newsletter that provided ongoing updates in the competition process for the staff of the Water Treatment Plants.

Coordinator of the Strategic Plan for Future Water Supply for the Water Department at the City of San Diego. This innovative process partnered with stakeholders consisting of community leadership in the participation in planning for future water supply. The Strategic Plan was recognized at Orchids & Onions Award Ceremony (awarded Orchid in 1997).

EDUCATION

M.B.A., National University, San Diego, California.

M.P.A., National University, San Diego, California.

B.A. in Liberal Arts, Mary Manse College, Toledo, Ohio.

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS SERVED

Board Member of YMCA.

Volunteer for Community Hospice of San Diego and Habitat International.

Served actively in various community, youth and professional organizations.

ATTACHMENT D

Lorna L. Ross

PROFESSIONAL EXPERIENCE

Honeywell DMC Services Inc. 2000 to Present	*District Manager* Coordinates HDMC program operations in Southern California. Responsible for the hiring, training, reviewing, and supervising of Program Managers. Includes needs assessment of clients regarding demand-side management programs and the development of quality control and training programs. Provides key support for the LADWP ULFT Distribution Program, LADWP Rebate Program, and SDCWA Voucher Incentive Programs.
United States Air Force 1995 to 2000	*Corporate Counsel* Drafted all services and supply contracts for company with $5 billion budget. Advised management in ADA and Title VII mediations achieving win-win results. Directed four staff members, managed $300,000 budget, supervised all claims. Negotiated personal injury and property damage cases for $150,000 savings. Recruited 15 hired applicants from Southern California graduate schools. Successfully litigated $30 million breach of contract and libel lawsuit. *Personnel Actions Officer* Advised hundreds of employees regarding rights and recourse. Represented individuals facing criminal charges and administrative actions. Investigated and resolved employee misconduct cases for management. Provided expert legal assistance to 7,000-employee organization. Zealous advocacy led to dropped charges in 25% of cases. Guest lecturer at local universities on workforce
Law Firm of Green & Silverstrom 1992 to 1995	*Associate Attorney* Practiced in contracts, real property, construction and insurance litigation. Handled all facets of trial preparation including drafting and arguing motions. Conducted depositions, attended arbitrations and settlement conferences. Enforced pre- and post-judgment remedies to achieve clients' interests. Negotiated resolutions and prepared extensive settlement agreements
EDUCATION	Juris Doctor, McGeorge School of Law Bachelor of Arts, Magna cum Laude, CSU Northridge

Greg Kozykoski

Professional Experience
Honeywell DMC Services
1985 to Present

Systems Coordinator
Maintain IS hardware, software, and system infrastructure to offices located in the West/Midwest Region. These offices represent six servers and approximately 50 workstations. Support the Regional IS Manager in installing and upgrading all software. Troubleshoot and repair all hardware-related issues, and serve as the region's IS helpdesk, providing ongoing assistance to employees. Oversee maintenance, upgrades and operation of office phone system for the El Segundo office. Set up and maintain data connection with six off-site Community Based Organizations.

Program Manager – City of Albuquerque Audit Program
Oversee the City of Albuquerque's Residential Audit & Retrofit Program. Duties include corporate financial reporting and management of profit and loss. Responsible for hiring and training entire program staff, and maintaining day-to-day operations of both administrative and field aspects of this program, including: purchasing, scheduling, data collection, tracking & reporting, marketing, billing, client and customer relations.

Regional Water Services Coordinator – Large Commercial
Researched, designed and implemented HDMC's large commercial water auditing procedures. Developed water saving algorithms, created customized database, designed data collection tools and researched current technological trends.

Project Management Support - SFHA Fixture Replacements
Supports the planning and implementation of the replacement of toilet fixtures in multiple public housing facilities in San Francisco. Includes contractor coordination and supervision, and activity tracking.

Program Manager - Cal-Am Water Audit Program
Responsible for the development, implementation and operations of the California American Water Company Residential Water Audit Program. Hire, train and perform random field evaluations of employees. Maintain the quality and productivity of invoicing inventory control and ensure contract compliance. Assist in the development of customized software and data collection forms.

Senior Inspector - So. Cal. Gas Program
Scheduled and conducted field evaluations of the inspection staff. Located and established reliable accounts to supply all materials needed for the program, maintained and monitored adequate supplies for all inspectors.

Greg Kozykoski (con't)

Volt Energy Systems
1981 to 1985

Senior Inspector - So. Cal Gas Program
Scheduled and conducted field evaluations of the inspection staff. Perform "special" inspections that are more complex or involve irate customers or contractors.

Field Inspector - So. Cal. Gas Program
Perform weatherization inspections on the Southern California Gas Company Weatherization Credit and Financing Program.

Certificates Acquired

Landscape Water Management - Irrigation Association Board of Governors, 1993

Blower Door and Carbon Monoxide Testing - So. Cal. Gas Co. 1992

California Home Energy Efficiency Rating Systems - CHEERS, 1992

Advanced Weatherization - Southern California Gas Company, 1984

Basic Weatherization - Southern California Gas Company, 1981

Christine Rangel

PROFESSIONAL EXPERIENCE

Conservation Experience	*17 Years*
Honeywell DMC Services 1986 to Present	*Program Manager* Los Angeles Department of Water and Power Water Conservation Rebate Program, San Diego County Water Authority Voucher Programs (Residential and Commercial), and Santa Monica Baysaver. Responsibilities include program oversight and management of daily operations, primary client contact, directing Rebate Center supervisors, ensuring program compliance, resolving high level customer service issues and coordinating all system updates and improvements with IS manager. Other programs include Metropolitan Water District of Orange County, Long Beach Water Department, and LADWP ULFT Program. Responsibilities include supervising operations and staff for installation procedures and quality assurance, purchasing materials, quality control, database management, tracking, reporting, and customer/client liaison. Other experience includes designing and implementing neighborhood marketing campaign for single and multi-family sites. *Program Manager Southern California Gas Company Direct Assistance Weatherization Program*. Responsibilities included managing support service delivery to low-income customers, screening information requests, solving problems, and fielding and forwarding customer suggestions. Other responsibilities included managing the inspection support staff and creating and maintaining schedules. Also responsible for the smooth running of all daily operations, quality assurance checks, fiscal budgeting, report generation and submission, and employee evaluations. *Program Supervisor Southern California Gas Company Direct Assistance Program.* Responsible for the supervision of all program activities including tracking and reporting, analyzing trends in production, quality control functions, scheduling, and data processing. Also acted as a liaison to CBOs, hiring, training, and supervising a staff of 30.
Education	Six Sigma *Plus* Green Belt Certification, 2001 Business and Chemistry Courses, Cerritos College *Chemistry Courses, University of South Carolina*

Attachment A

X-Ray Processors - Project Summary

Principal Sponsor/ Investigator	Facility	No. licensed beds	No. of processors retrofitted	Annual water savings calculated (gallons)	Annual water savings measured (gallons)	Ratio of measured to calculated (2 cases)	Application of average ratio to calculated savings (3 cases)	Ad sav (g
LADWP	White Memorial Hospital	375	10	5,898,948			8,947,650	
LADWP	Daniel Freeman Memorial Hosp	364	4	1,885,344			2,859,730	
LADWP	Granada Hills Community Hosp	201	2	1,812,612			2,749,409	
LADWP	Good Samaritan Hospital	408	14	10,671,294	16,485,744	1.545		1
MWD ICP	Pacifica Alliance Medical Ctr	138	3	2,114,370	3,147,820	1.489		
MWD ICP	Irvine Regional Hospital	176	1		1,002,040			
MWD ICP	California Hospital Medical Ctr	313	4		4385770			
	TOTALS	1975	38					39,5

Average ratio of measured to calculated 1.51682

Average annual water sa processor retrofit (ac

10/30/01 Prepared by John Koeller